

## WE CLAIM:

1. A transparent port for a high rate network comprising:  
a receiver unit for receiving an incoming signal of an arbitrary data  
5 rate R1 and extracting a user signal and a data clock;  
a programmable link termination PLT for reporting a set of  
performance parameters for said incoming signal; and  
a processing unit for recognizing a plurality of provisioned  
protocols, selecting a first protocol characterizing said incoming signal and  
10 configuring said PLT according to said first protocol.
2. A transparent port as claimed in claim 1, wherein said PLT  
translates said user signal into a data signal whenever said rate R1  
corresponds to a provisioned first protocol and passes said user signal  
15 unchanged whenever said rate R1 is not recognized by said processing  
unit.
3. A transparent port as claimed in claim 1, wherein said PLT  
performs one or more of a framing, an error count, a code conversion, and  
20 a parity correction operation.
4. A transparent port as claimed in claim 2, further comprising a  
mapping unit for rearranging the bits of said data signal into a container  
signal of a rate R corresponding to a second protocol.  
25
5. A transparent port as claimed in claim 1, wherein said PLT  
comprises logic gates configured to perform measurement of a  
provisioned parameter.
- 30 6. A transparent port as claimed in claim 1, wherein said PLT is a  
programmable gate array.

7. A transparent port as claimed in claim 1, wherein said set of performance parameters includes a previous section fail indicator.

8. A transparent port as claimed in claim 1, wherein said set of performance parameters includes one or more of signal strength, clock continuity and jitter.

9. A transparent port as claimed in claim 1, wherein said PLT performs one or more of a framing, an error count, a code conversion, and a parity correction operation.

10. A transparent port for a high rate network comprising:  
a programmable link instigation PLI for reporting a set of performance parameters for a data signal of an arbitrary rate R1';  
a processing unit for recognizing a plurality of provisioned protocols, selecting a first protocol characterizing said data signal and configuring said PLI according to said first protocol; and  
a transmitter unit connected to said PLI for launching an outgoing signal of said first protocol, comprising user information within said data signal.

11. A transparent port as claimed in claim 10, wherein said PLI translates said data signal into a user signal whenever said rate R1' corresponds to a provisioned first protocol, and passes said data signal unchanged whenever said rate R1 is not recognized by said processing unit.

12. A transparent port as claimed in claim 10, further comprising a reverse mapping unit for rearranging the bits of a container signal of a second protocol into said data signal of said first protocol.

13. A transparent port as claimed in claim 10, wherein said PLI comprises logic gates configured to perform measurement of a provisioned parameter.

5           14. A transparent port as claimed in claim 10, wherein said PLI is a programmable gate array.

10           15. A transparent port as claimed in claim 10, wherein said set of performance parameters includes a previous section fail indicator.

16. A transparent port as claimed in claim 10, wherein said set of performance parameters includes signal strength, clock continuity and jitter.

15           17. A transparent port as claimed in claim 10, wherein said PLI performs one or more of a framing, an error count, a code conversion, and a parity correction operation.

20           18. A method for transmitting a continuous digital signal of an arbitrary rate R1 over a synchronous network as a transparent tributary, comprising:

at a transmit terminal, selecting a container signal of a rate R, higher than said rate R1;

25           detecting the rate R1 of said continuous digital signal and determining a first protocol corresponding to said rate R1;

measuring according to a first protocol a set of performance parameters on said continuous signal and reporting said set of performance parameters; and

30           translating said set of performance parameters from said first protocol to a second protocol characterizing said container signal and providing said translated set into said container signal.

19. A method as claimed in claim 18, further comprising transmitting said container signal from said transmit terminal to a receive terminal.

5           20. A method as claimed in claim 18, further comprising informing said receive terminal of said rate R1 and of said first protocol through signaling.

10           21. A method as claimed in claim 20, further comprising:  
at the receive terminal, recovering said container signal;  
extracting said set of performance parameters from said container  
signal; and  
reconstructing said continuous signal based on said rate R1.

15           22. A method as claimed in claim 21, further comprising transmitting said continuous signal with said set of performance parameter to a user.